

# AXIAL FLUX MACHINE, STATOR AND FABRICATION METHOD

## Abstract of Disclosure

An axial flux machine comprises: a soft magnetic composite stator extension positioned in parallel with a rotor disk and having slots; soft magnetic composite pole pieces attached to the stator extension and facing a permanent magnet on the rotor disk, each comprising a protrusion situated within a respective one of the slots, each protrusion shaped so as to facilitate orientation of the respective pole piece with respect to the stator extension; electrical coils, each wrapped around a respective one of the pole pieces. In another embodiment the soft magnetic composite pole pieces each comprise a base portion around with the electrical coils are wound and a trapezoidal shield portion a plurality of heights with a first height in a first region being longer than a second height in a second region, the second region being closer to a pole-to-pole gap than the first region.

## Figures